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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/752,672 | 01/08/2004 | Chih-Hsiao Chen | CHEN3615/EM | 4456 |
| 23364 | 7590 | 08/01/2005 | EXAMINER | |
| BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314 | | | BOLDA, ERIC L | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 3663 | |

DATE MAILED: 08/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/752,672

Applicant(s)

CHEN, CHIH-HSIAO

Examiner

Eric Bolda

Art Unit

3663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on January 8, 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-79 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-79 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant is required under 35 U.S.C. 121 to elect one of the following disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable (currently, no claims appear to be generic):

- I. Embodiment with one gain medium
- II. Embodiment with more than one gain medium

2. Upon election of one of species I-II, the applicant is further required under 35 U.S.C. 121 to elect one of the following disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable (currently, no claims appear to be generic):

A. Embodiment in which the carrier density distribution is controlled by the difference between the local resonant frequency of the cavity and the peak frequency of the gain medium

B. Embodiment in which the carrier density distribution is controlled by the product of reflectivities of the DBR region pair

3. Upon election of one of species A-B, the applicant is further required under 35 U.S.C. 121 to elect one of the following disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable (currently, no claims appear to be generic):

1. Embodiment wherein the gain clamper uses electrodes to vary coefficients of the gain medium of each optical amplifier

2. Embodiment wherein the gain clumper uses optical pumping to vary the gain or loss coefficients of the gain medium of each optical amplifier

4. Upon election of one of species 1-2, the applicant is further required under 35 U.S.C. 121 to elect one of the following disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable (currently, no claims appear to be generic):

a. Embodiment wherein the grating materials are disposed with the same pitch, and the more the grating material approaches the output facet end, the larger the index difference of the grating material is

b. Embodiment wherein the grating materials are disposed with the same pitch, and the more the grating material approaches the output facet end, the larger the structure discontinuity of the grating material is

c. Embodiment wherein the grating materials have the same index difference and structure discontinuity and are disposed with varying pitches so that the more the laser cavity approaches the output facet end, the more the oscillation wavelength of the laser cavities match the peak of the spectrum of the gain medium

5. Upon election of one of species a,b, or c, the applicant is further required under 35 U.S.C. 121 to elect one of the following disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable (currently, no claims appear to be generic):

- i. Embodiment wherein the laser mirrors are wavelength-non-selective
- ii. Embodiment wherein the laser mirrors are wavelength selective
- iii. Embodiment wherein the laser mirrors have the same reflectivity
- iv. Embodiment wherein loss wings are disposed between each laser mirror and the gain medium
- v. Embodiment wherein gain wings are disposed between each laser mirror and the gain medium

6. Upon election of one of species i, ii, iii, iv, or v, the applicant is further required under 35 U.S.C. 121 to elect one of the following disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable (currently, no claims appear to be generic):

- AA. Embodiment comprising amplifiers for amplifying the optical powers from laser cavities and transmitting the signal to detectors
- BB. Embodiment comprising at least one electrode being controlled by external signals to adjust the carrier densities of the gain medium
- CC. Embodiment comprising gain or loss wings controlled by control circuits

7. Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement (e. g. I-A-1-c-iv-BB), and a

listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Conclusion

8. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Eric Bolda whose telephone number is 571-272-8104. The examiner can normally be reached on M-F from 8:30am to 5pm.

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If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Jack Keith, can be reached on 571-272-6878. Please note the fax phone number for the organization where this application or proceeding is assigned is 571-273-8300 *starting July 15, 2005* (the old fax number 703-872-9306 remains until then).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EB

Eric Boldt

JACK KEITH
PRIMARY EXAMINER
DE 3663